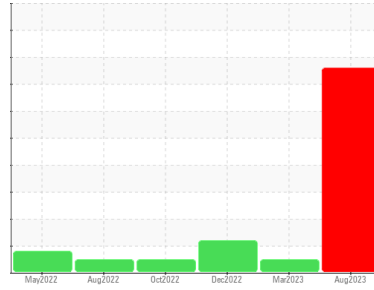




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
811057

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Silver ppm levels are severe.

Contamination

There is a moderate concentration of dirt present in the oil. High amount of ingressed dirt has caused abrasive wear to the component.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0084359	GFL0070726	GFL0063732
Sample Date	Client Info	21 Aug 2023	06 Mar 2023	08 Dec 2022
Machine Age	kms	0	2116	32708
Oil Age	kms	53597	600	6536
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		SEVERE	NORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	▲ 3.6
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >100	81	34	26
Chromium	ppm ASTM D5185(m) >20	4	2	2
Nickel	ppm ASTM D5185(m) >2	<1	<1	<1
Titanium	ppm ASTM D5185(m) >2	<1	<1	<1
Silver	ppm ASTM D5185(m) >2	9	0	0
Aluminum	ppm ASTM D5185(m) >25	2	2	2
Lead	ppm ASTM D5185(m) >40	2	0	<1
Copper	ppm ASTM D5185(m) >330	35	1	2
Tin	ppm ASTM D5185(m) >15	<1	<1	0
Antimony	ppm ASTM D5185(m)	0	<1	0
Vanadium	ppm ASTM D5185(m)	0	0	0
Beryllium	ppm ASTM D5185(m)	0	0	0
Cadmium	ppm ASTM D5185(m)	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 2	4	2	2
Barium	ppm ASTM D5185(m) 0	4	0	0
Molybdenum	ppm ASTM D5185(m) 50	57	56	57
Manganese	ppm ASTM D5185(m) 0	6	<1	<1
Magnesium	ppm ASTM D5185(m) 950	904	896	943
Calcium	ppm ASTM D5185(m) 1050	995	1109	1067
Phosphorus	ppm ASTM D5185(m) 995	960	1039	1068
Zinc	ppm ASTM D5185(m) 1180	1117	1148	1156
Sulfur	ppm ASTM D5185(m) 2600	2188	2428	2516
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >25	▲ 30	4	4
Sodium	ppm ASTM D5185(m)	11	2	2
Potassium	ppm ASTM D5185(m) >20	4	<1	0

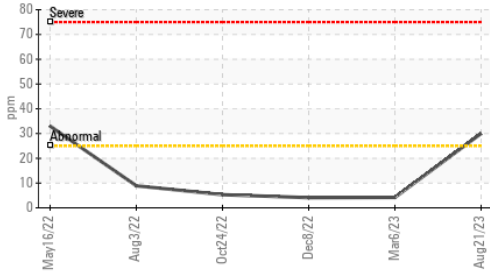
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% ASTM D7844* >3	0.5	0.4	0.2
Nitration	Abs/cm ASTM D7624* >20	10.2	10.4	9.1
Sulfation	Abs./1mm ASTM D7415* >30	24.2	24.0	21.2



OIL ANALYSIS REPORT

▲ Silicon (ppm)



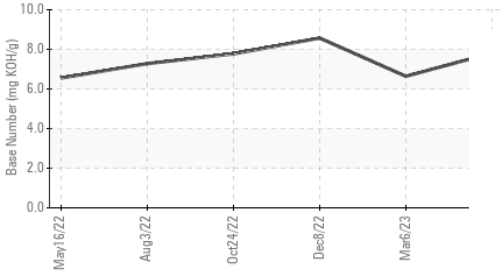
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	21.8	19.2	17.9
Base Number (BN)	mg KOH/g	ASTM D2896*		7.81	6.64	8.57

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

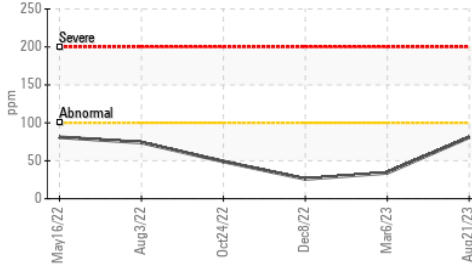
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	10.3	11.9	▲ 10.8

GRAPHS

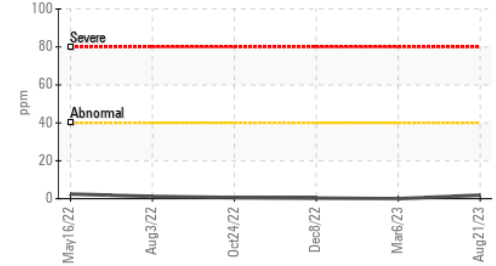
Base Number



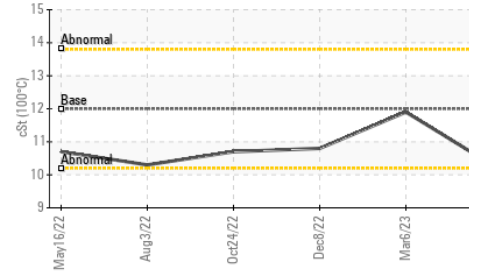
Iron (ppm)



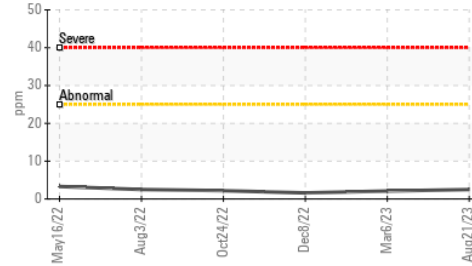
Lead (ppm)



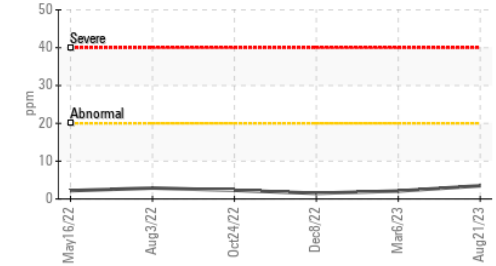
Viscosity @ 100°C



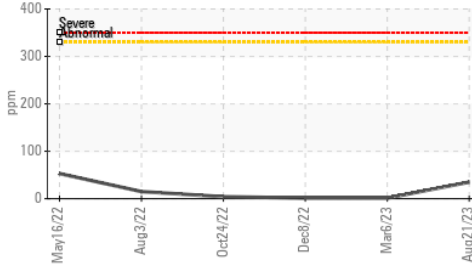
Aluminum (ppm)



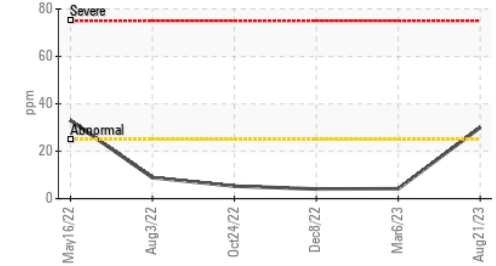
Chromium (ppm)



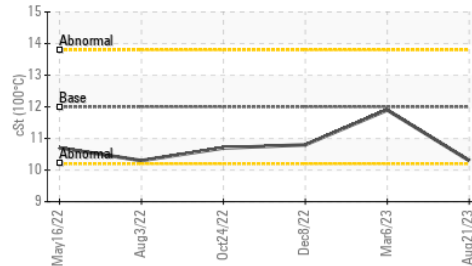
Copper (ppm)



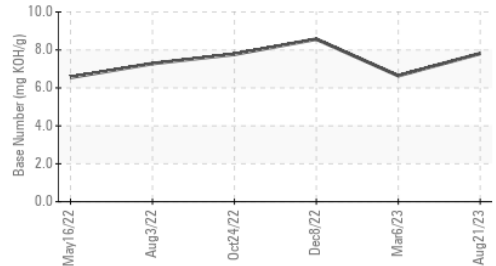
▲ Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0084359 **Received** : 08 Sep 2023
Lab Number : 02581105 **Diagnosed** : 08 Sep 2023
Unique Number : 5642170 **Diagnostician** : Kevin Marson
Test Package : MOB 2

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

220 Carmek Blvd
 Rocky View County, AB
 CA T1X 1X1
 Contact: GFL Calgary
 calgarymaintenance@gflenv.com
 T:
 F: (403)369-6163